Mapping support strategies and outcomes in agricultural-welfare collaboration for people with disabilities in Japan:
A scoping review

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障がい者を対象とした農福連携の支援方略とその効果に関する実践研究のスコーピングレビュー

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要約

本研究は、日本における農福連携（AWC: Agricultural-Welfare Collaboration）における障がい者への支援内容とその効果を整理するため、日本語文献に基づくスコーピングレビューを実施した。医中誌 Web および CiNii Research を用いて 2013 年～ 2024 年に公表された文献を検索し、15 件を分析対象とした。支援は「職場環境の調整」「個別配慮」「相談・支援体制」「マッチング支援」「啓発・人材育成」「生産販売支援」の 6 分類に整理され、効果は「心理的」「身体的」「社会的」「職業的」「経済的」「組織的」「健康」「環境」の 8 領域に分類された。しかし、支援と効果の関係を具体的に対応づけて記述していた文献はわずか 3 件にとどまり、表 3 で整理した対応パターンは限定的な情報に基づくものであり、多くの効果は記述的・定性的な報告にとどまっていた。心理的・社会的効果は特に頻度が高く、職場環境調整や相談支援体制との関連が示唆された。しかし、効果を検証するための客観的指標や評価ツールを用いた研究は乏しく、農福連携の有効性を実証的に検証するには方法論的課題が多い。今後は、複合的な実践を踏まえた柔軟かつ実証的な研究デザインの構築が求められる。本レビューは、農福連携の支援と効果の現状、そして今後の課題を整理し、実践モデルの構築とエビデンスの蓄積に向けた基盤を提供するものである。

Key words
agricultural-welfare collaboration, people with disabilities, support strategies, scoping reviews, inclusive employment

1. Introduction

Agricultural-welfare collaboration (AWC) has emerged in Japan as an innovative initiative aimed at addressing two major societal challenges: labor shortages in agriculture and the limited employment and social participation opportunities available to people with disabilities. In recent years, diverse models of AWC have been developed, including collaborative efforts between agricultural organizations and welfare facilities, as well as independent farming initiatives led by welfare institutions. These initiatives have been strongly supported by national policy, particularly through the Vision for the Promotion of Agricultural-Welfare Collaboration issued by the Ministry of Agriculture, Forestry and Fisheries (2024).

In rural areas experiencing rapid demographic aging, AWC serves a dual function—as a workforce solution for farmers and as a meaningful, sustainable occupational opportunity for people with disabilities. According to Hatakeyama and Sugioka (2022), AWC may also function as a model for regionally inclusive societies by simultaneously promoting economic self-reliance among people with disabilities and ensuring agricultural sustainability.

While a range of potential benefits has been proposed—such as improvements in physical and mental health, increased self-esteem, and enhanced workplace environments (Toyoda et al., 2022; Ugai & Ota, 2022)—existing research remains limited in scope. Most published studies are individual case reports (e.g., Gouda, 2020; Oshima et al., 2021), with few attempts to systematically categorize support strategies (Fujimoto, 2024) or empirically examine their relationship to reported outcomes.

To address these limitations, the present study conducted a scoping review of Japanese-language literature on AWC practices involving people with disabilities. The objectives were to identify the types of support strategies employed, summarise the reported outcomes, and examine the relationship between these supports and their effects. By systematically mapping existing practices, this review aims to establish a foundation for future empirical research and support the evidence-based development of AWC practices. In addition, although this review focuses on

Japanese-language literature, the decision to publish in English aims to contribute to international comparative discussions on inclusive agricultural practices and disability employment. It also allows for the dissemination of Japan's unique AWC practices to a broader global audience, encouraging cross-cultural learning and collaboration.

2. Methods

2.1 Review design

This study employed a scoping review methodology to systematically map the support strategies and their associated outcomes in AWC practices involving people with disabilities in Japan. The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018), and was guided by the PCC (Population, Concept, Context) framework (Peters et al., 2015; Peters et al., 2020). The methodological approach also drew on the refinements to scoping review methodology proposed by Levac, Colquhoun, and O'Brien (2010), and Arksey and O'Malley (2005). Although no formal protocol was registered for this review, it was conducted in line with recognized methodological frameworks to ensure transparency and replicability.

2.2 Eligibility criteria and search strategy

Studies were included in the review if they met the following criteria: they reported on support strategies in agricultural-welfare collaboration (AWC) practices in Japan, focused on individuals with physical, intellectual, mental, or developmental disabilities, and were original articles published in academic journals with accessible abstracts. Exclusion criteria comprised studies conducted outside of Japan, studies that did not target people with disabilities, and non-original works such as commentaries or conference proceedings.

The search strategy incorporated Japanese-language terms related to agricultural-welfare collaboration, disability, and support- or outcome-related concepts. Terms used for AWC included " 農福連携 " (*nōfuku renkei*, meaning "agricultural-welfare collaboration"), " 障害　農業 " or " 障がい　農業 " (*shōgai nōgyō*, "disability and agriculture"), and " 農業　福祉 " (*nōgyō fukushi*, "agriculture and welfare"). For target populations, search terms included " 障害 " or " 障がい " (*shōgai*, "disability"), " 知的障害 " (*chiteki shōgai*, "intellectual disability"), " 身体障害 " (*shintai shōgai*, "physical disability"), " 精神障害 " or " 精神疾患 " (*seishin shōgai*/*seishin shikkan*, "mental disability/disorder"), and " 発達障害 " (*hattatsu shōgai*, "developmental disability"). To capture relevant concepts, the search also included terms such as " 支援 " (*shien*, "support"), " 効果 " (*kōka*, "effect"), " 影響 " (*eikyō*, "impact"), and " 課題 " (*kadai*, "issues").

The search period was limited to publications from 2013 to 2024, corresponding to the release of the Ministry of Agriculture, Forestry and Fisheries' Revitalization Plan for Agriculture and Rural Areas in 2013. Full search strings were constructed by combining these keywords with Boolean operators and adapted to the syntax requirements of each database. Details of the full search strategy are available upon request to ensure transparency and reproducibility.

The full search strings and database-specific queries are provided in Appendix 1, and a summary of the included studies, including key characteristics, is presented in Appendix 2.

2.3 Screening and selection

Two authors independently screened the titles and abstracts, followed by full-text reviews to determine eligibility. Discrepancies were resolved through discussion with a third author. The screening process is illustrated in the PRISMA flow diagram (Figure 1).

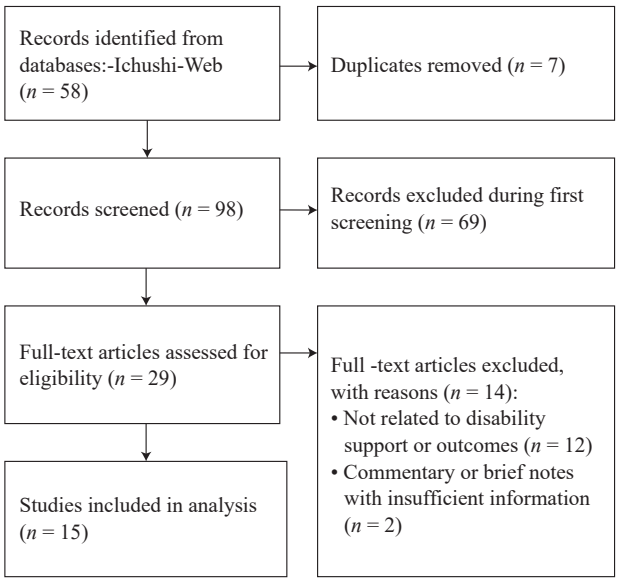

Figure 1: PRISMA flow diagram for the selection of studies in this scoping review

2.4 Data extraction and synthesis

For each included study, the following data were extracted: authors, publication year, study purpose, participant characteristics (e.g., type of disability, organizational affiliation), sample size, study design, support strategies, reported outcomes, and key findings. A thematic analysis was conducted to systematically organize the extracted data. Through iterative discussions among the authors, including professionals in occupational therapy and rehabilitation science, support strategies were categorized into six types, and reported outcomes into eight types. All extracted data were charted using a standardized format and were reviewed repeatedly to ensure consistency and reliability in the classification process. The specific contents of the categories and outcomes are presented in the Results section.

3. Results

3.1 Overview of included studies

A total of 105 articles were initially identified through database searches. Following the removal of duplicates and the screening of titles, abstracts, and full texts, 15 studies were deemed eligible for inclusion. Most of the included studies adopted qualitative methodologies and were conducted by researchers or practitioners affiliated with the welfare or agricultural sectors. (See the Figure 1)

3.2 Categories of support strategies (RQ1)

Support strategies implemented in agricultural-welfare collaboration (AWC) practices for people with disabilities were classified into six categories. The first category, workplace and environmental adjustments, included segmentation of work tasks, creation of work manuals, installation of toilets and rest areas, and the use of adaptive tools. The second category, task customization and individual accommodations, involved tailoring tasks to individual abilities, considering health conditions, and offering flexible scheduling. Third, consultation and support system development encompassed the establishment of consultation mechanisms and the creation of intermediary support agencies. The fourth category, matching and employment support, referred to services such as job placement and coordination between farms and welfare institutions. Fifth, awareness-raising, human resource development, and community engagement activities were reported, including staff training programs, public awareness campaigns, and collaborative efforts with local communities. Finally, support for production and sales included assistance with product development and the expansion of sales channels. Most studies reported multiple support strategies in combination, with workplace and environmental adjustments and consultation/support system development being the most frequently documented. Table 1 summarizes the six identified support strategy categories and serves as a conceptual foundation for analyzing their potential links to outcomes discussed in subsequent sections.

3.3 Reported effects (RQ2)

The effects reported in the reviewed studies were categorized into eight thematic areas: psychological effects (e.g., improvements in self-esteem and reductions in stress), physical effects (e.g., enhanced physical fitness and reduced fatigue), social effects (e.g., increased social participation and strengthened interpersonal relationships), economic effects (e.g., increased product sales and expansion of farm-related businesses), occupational functioning (e.g., improved task performance and increased job engagement). Psychological and social effects were the most frequently documented, followed by economic and physical benefits. This aligns with existing literature on gardening as a therapeutic occupation, which has been shown to improve engagement and well-being (York & Wiseman, 2012). Organizational change (e.g., enhanced workplace culture and improved staff collaboration), health-related outcomes (e.g., better general health and daily functioning), and environmental improvements (e.g., upgraded workspaces and improved accessibility) were also identified. These findings are consistent with the broader research on home gardening, which has highlighted similar mental and physical health benefits from engaging with nature and meaningful activity (Chalmin-Pui et al., 2021). Table 2 summarizes these categories with representative examples and serves as a conceptual framework for interpreting the multidimensional impact of AWC practices.

Table 1: Categories of support strategies in agricultural-welfare collaboration

Support Strategy	Description	No. of Studies	References
Workplace and environmental adjustments	Task segmentation, visualization, manual creation, adaptive tools	7	Gouda(2019); Oshima(2020); Gouda(2021); Kagawa et al. (2021) Hongo et al. (2022); Omatsu et al. (2021); Satake et al. (2022)
Task customization and individual accommodations	Task division, scheduling, and individual health accommodations	8	Gouda(2019); Oshima(2020); Gouda(2021).Kagawa et al. (2021) Hongo et al. (2022); Nakazato et al. (2021); Omatsu et al. (2021); Oshima et al. (2021)
Consultation and support system development	Establishing accessible consultation mechanisms and support systems	6	Gouda(2020); Oshima(2020); Gouda(2021) Hongo et al. (2022); Nakazato et al. (2021); Oshima et al. (2021)
Matching and employment support	Job matching and coordination between farms and welfare agencies	6	Gouda(2020); Gouda(2021); Kagawa et al. (2021) Hongo et al. (2022); Omatsu et al. (2021); Oshima (2020)
Awareness-raising, human resource development, and regional understanding	Staff training, disability awareness, and community engagement	2	Gouda(2020); Gouda(2021)
Support for production and sales	Product development, Market development	4	Gouda(2019); Gouda(2021); Oshima (2020); Oshima et al. (2023)

Table 2: Types of effects reported in AWC

Effect	Description	No. of Studies	References
Psychological effects	Improved self-esteem, reduced psychological stress, increased task satisfaction	5	Kagawa et al. (2024), Omatsu et al. (2021), Oshima et al. (2021), Toyoda et al. (2022), Ugai et al. (2022)
Physical effects	Improved physical strength, reduced fatigue, better overall physical condition	3	Omatsu et al. (2021), Satake et al. (2022), Toyoda et al. (2022)
Social effects	Opportunities for social participation, peer bonding, and interpersonal interaction	4	Gouda (2021), Omatsu et al. (2021), Oshima et al. (2021), Toyoda et al. (2022)
Economic effects	Increased product sales, business expansion, commercialization opportunities	3	Gouda (2019), Gouda (2021), Oshima et al. (2023)
Occupational functioning	Improved task performance speed and time management	2	Nagai et al. (2021), Satake et al. (2022)
Organizational change	Mutual growth between staff and participants, Optimal task distribution	2	Gouda (2019), Gouda (2021)
Health-related outcomes	Improved daily routine and health management	3	Gouda (2021), Kagawa et al. (2024), Toyoda et al. (2022)
Environmental improvement	Workplace environment adjustments including toilet facilities	1	Kagawa et al. (2024)

3.4 Relationship between support and outcomes (RQ3)

Table 3 summarizes the co-occurrence of support strategies and reported effects across the reviewed studies. However, it is important to note that only three studies provided sufficiently detailed information to allow for the mapping of specific support strategies to reported effects. Although many studies employed multiple support types, several associations emerged in these limited cases. For example, workplace and environmental adjustments were linked to psychological, physical, and social effects, as well as improvements in occupational functioning. Task customization and individual accommodations were associated with psychological, physical, and social outcomes. Consultation and support system development was related to psychological and social effects. Matching and employment support also demonstrated associations with psychological, physical, and social effects. In contrast, awareness-raising and regional understanding initiatives were primarily linked to psychological effects, while support for production and sales was exclusively associated with economic outcomes.

These patterns should be interpreted with caution, as they are based primarily on qualitative descriptions rather than validated outcome measures or statistical analyses. The limited

Table 3: Relationships between support strategies and reported outcomes

Support Strategy/Effects	Psychological effects	Physical effects	Social effects	Economic effects	Occupational functioning	Organizational change	Health-related outcomes	Environmental improvement
Workplace and environmental adjustments	Omatsu et al. (2021)	Omatsu et al. (2021); Satake et al (2022)	Omatsu et al. (2021)	–	Satake et al. (2022)	–	–	–
Task customization and individual accommodations	Omatsu et al. (2021); Oshima et al. (2021)	Omatsu et al. (2021)	Omatsu et al. (2021); Oshima et al. (2021)	–	–	–	–	–
Consultation and support system development	Oshima et al. (2021)	Omatsu et al. (2021)	Oshima et al. (2021)	–	–	–	–	–
Matching and employment support	Oshima et al. (2021)	–	Omatsu et al. (2021)	–	–	–	–	–
Awareness-raising, human resource development, and regional understanding	Omatsu et al. (2021)	–	–	–	–	–	–	–
Support for production and sales	–	–	–	Oshima et al. (2021)	–	–	–	–

evidence base underscores the need for more empirical studies to clarify the relationships between specific supports and their outcomes.

4. Discussion

This scoping review identified and classified the support strategies employed in agricultural-welfare collaboration (AWC) practices for people with disabilities in Japan, along with the reported outcomes and their potential interrelationships. The findings suggest that AWC support strategies are multifaceted, encompassing environmental modifications, individualized task arrangements, intermediary support mechanisms, and community-based collaboration. Reported effects extend beyond employment sustainability and physical health improvements to include enhanced social participation and contributions to regional revitalization.

However, the review also revealed that only a small number of studies (n = 3) explicitly described the relationship between support strategies and outcomes in sufficient detail to allow systematic mapping. Most adopted qualitative designs and lacked structured evaluation frameworks; outcomes were often described in narrative form, and few studies employed validated measurement tools or statistical analyses. This reveals a critical gap in the current evidence base and emphasizes the need for empirical studies that investigate how particular support mechanisms relate to measurable outcomes such as quality of life, employment continuity, or social integration.

It is also important to acknowledge the contextual complexity of AWC as a field of practice. AWC encompasses a wide range of models—employment-oriented, community-based, rehabilitative—implemented across diverse agricultural and welfare settings. Support strategies are often applied in combination and adapted to meet specific individual and organizational needs. While this diversity strengthens practical relevance, it complicates efforts to evaluate interventions systematically and generalize findings. The limited number of studies addressing strategy-outcome links suggests that current research is still at a descriptive and exploratory stage. The diversity of AWC models across settings and purposes also aligns with findings in urban agricultural inclusion studies, which highlight the importance of contextual adaptation and multi-level collaboration (Schaffernicht & Quendler, 2023). Disentangling the effects of specific support strategies can be methodologically challenging.

Given these challenges, future research should aim to develop rigorous yet adaptable evaluation frameworks that reflect the complexity of real-world AWC settings. Mixed-methods approaches, longitudinal evaluations, and comparative designs—such as comparing programs with and without specific support mechanisms—may provide more robust evidence. Furthermore, incorporating standardized outcome indicators and validated tools could improve the comparability and reliability of findings across studies. These efforts could help clarify the effectiveness of different support strategies and facilitate more consistent and measurable outcomes.

These findings also resonate with the principles of community-centered practice in occupational therapy, which emphasize inclusive participation, local collaboration, and context-specific approaches (World Federation of Occupational Therapists, 2016). Overall, this review provides a foundational understanding of the support strategies, outcomes, and implementation challenges observed in Japanese AWC practices. Strengthening empirical evaluation and integrating diverse perspectives will be essential for advancing AWC as a sustainable, inclusive, and evidence-informed model for disability support.

The current classification of support strategies and effects offers a preliminary conceptual framework, but should not be interpreted as comprehensive or conclusive. Future studies should seek to build on this foundation by generating more robust evidence and practical models.

5. Limitations

This scoping review has several limitations. First, it included only Japanese-language publications, which may limit the generalizability of the findings to broader international contexts and exclude potentially relevant studies published in other languages. However, given that many AWC practices in Japan are reported only in Japanese and reflect uniquely domestic contexts, this focus was necessary to capture the depth and specificity of the field.

Second, although no protocol was formally registered, the review followed established methodological frameworks (e.g., PRISMA-ScR and PCC), and all procedures, including search strategies and inclusion criteria, are transparently reported to ensure reproducibility.

Third, the exclusion of gray literature, such as reports and policy documents, may have led to the omission of certain practical insights. Nevertheless, many of the included peer-reviewed studies were authored by practitioners or described field-based practices, offering rich accounts of real-world implementation.

6. Conclusion

This scoping review systematically mapped the support strategies and reported outcomes of agricultural-welfare collaboration (AWC) practices involving people with disabilities in Japan. The findings revealed a wide range of support mechanisms operating at individual, organizational, and community levels, including workplace and environmental adjustments, individualized accommodations, consultation systems, matching supports, and awareness-raising efforts. Although these strategies were associated with various outcomes such as psychological well-being, physical functioning, and social inclusion, these associations were primarily based on a small number of qualitative studies, and causal relationships remain unclear.

However, the relationships between specific support strat-

egies and their effects remain largely qualitative, sparsely documented, and insufficiently explored. The complexity and diversity of AWC initiatives—while reflecting real-world adaptability—pose methodological challenges for establishing causal inferences and standardizing evaluation.

To address these gaps, future research should prioritize the development of empirical, theory-informed approaches that account for the contextual nature of AWC. Mixed-methods and comparative studies, as well as the inclusion of professional perspectives, may facilitate more robust evidence generation.

By identifying current limitations and research needs, this review provides a basis for advancing AWC as a more effective, sustainable, and inclusive model for supporting the social participation and well-being of people with disabilities. In doing so, it also offers a conceptual classification that may be used to design more systematic, context-sensitive evaluations and to inform policy planning both within and beyond Japan.

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Appendix

Appendix 1: Search strings and strategy

The literature search was conducted at 13:00 on December 26, 2024, using the Japanese-language databases Ichushi-Web and CiNii Research. The following search strings were applied:

- Ichushi-Web (Japan Medical Abstracts)
  (“ 農福連携 ”/AL OR “ 障害　農業 ”/AL OR “ 障がい　農業 ”/AL OR “ 農業　福祉 ”/AL) AND (“ 効果 ”/AL OR “ 影響 ”/AL OR “ 課題 ”/AL OR “ 支援 ”/AL) AND ((“ 疾患 ”/TH OR “ 障害 ”/AL OR “ 障がい ”/AL AND “ 病 ”/TH) OR (“ 知的障害 ”/TH OR “知的障害”/AL) OR “身体障害”/AL OR (“精神疾患”/TH OR “精神障害”/AL) OR (“発達障害”/TH OR “発達障害”/AL)) AND (DT=2013:2024)
- CiNii Research
  (“ 農福連携 ” OR “ 障がい　農業 ” OR “ 農業　福祉 ” OR “ 障害　農業 ”) AND (“ 効果 ” OR “ 影響 ” OR “ 課題 ” OR “ 支援 ”) AND (“ 障害 ” OR “ 障がい ” OR “ 疾患 ” OR “ 精神障害 ” OR “ 知的障害 ” OR “ 発達障害 ” OR “ 身体障害 ”)

This appendix provides the Japanese search terms used for database screening, accompanied by their romaji transliterations and English meanings to support clarity for international readers.

Japanese terms often have alternative spellings or forms, especially for sensitive vocabulary such as “ 障害 ” and “ 障がい ” (*shōgai*, disability), both of which are commonly used and were included to ensure comprehensiveness.

Similarly, semantically related terms—such as “ 知的障害 ” (*chiteki shōgai*, intellectual disability) and “ 発達障害 ” (*hattatsu shōgai*, developmental disability), as well as “ 支援 ” (*shien*, support), “ 効果 ” (*kōka*, effect), “ 影響 ” (*eikyō*, impact), and “ 課題 ” (*kadai*, issue)—were combined to cover a range of relevant contexts.

Terms referring to agricultural and welfare domains (e.g., “ 農業 ” (*nōgyō*, agriculture), “ 福祉 ” (*fukushi*, welfare), and the compound term “ 農福連携 ” (*nōfuku renkei*, agricultural-welfare collaboration)) were used to identify literature specific to the Japanese AWC model.

Appendix 2: Summary of included studies and key implications

No.	Author/Year	Participants	Methods	Implications
[1]	Gouda (2019)	Agricultural employers (N = 6), employees with disabilities (N = 7)	Qual.	Reciprocal support fosters sustainable employment.
[2]	Gouda (2020)	Intermediary support organisations (N = 7)	Qual.	Intermediary orgs should include advocacy & evaluation.
[3]	Oshima (2020)	Agricultural employer (N = 1), employee with developmental disabilities (N = 1)	Qual.	Daily-life support and motivation enable win–win.
[4]	Gouda (2021)	Employers (N = 2), Worker (N = 2)	Qual.	Long-term direct employment supports mutual growth.
[5]	Kagawa et al. (2024)	Type B continuous employment support facilities (N = 5) , agricultural enterprises (N = 4) , and the City of Eniwa	Qual.	Individualized support and expertise improve sustainability.
[6]	Hongo et al. (2022)	JA staff, Type B support facility staff (N = 1), and collaborating farmers (N = 2)	Qual.	Cooperatives expand jobs via coordination.
[7]	Nagai et al. (2021)	Persons with intellectual and mental disabilities (N = 7), Staff of Type B continuous employment support facilities (N = 3)	Qual.	Home-context understanding and feedback aid retention.
[8]	Nakazato et al. (2021)	Persons with intellectual or mental disabilities (N = 7), B-type employment support staff (N = 3)	Mixed	Supporter involvement improves task efficiency.
[9]	Omatsu et al. (2021)	Agricultural employers (N = 3), persons with disabilities (N = 23)	Mixed	Simple short tasks reduce stress and raise engagement.
[10]	Oshima (2020)	Staff involved in agricultural-welfare collaboration projects (N = 2)	Qual.	Further development of AWC needed.
[11]	Oshima et al. (2023)	Type A continuous employment support facilities (N = 1)	Qual.	Researchers enable employment via coordination and linkage.
[12]	Oshima et al. (2021)	Persons employed through agricultural-welfare collaboration (N = 6)	Qual.	Reciprocal support systems enhance job stability.
[13]	Satake et al. (2022)	Senior high school students from special needs schools (N = 5)	Interv.	Simple tools and task design improve independence.
[14]	Toyoda et al. (2022)	Welfare service providers and special subsidiary companies (N = 72)	Cross	Farming improves physical, mental, and social health.
[15]	Ugai et al. (2022)	Participants referred from employment support facilities (N = 14)	Long.	Short citrus tasks reduce stress and boost alertness.

Note: Qual. = Qualitative study; Mixed = Mixed-methods study; Interv. = Intervention study; Cross = Cross-sectional study; Long. = Longitudinal study.